

CLAIMS

What is claimed is:

1 1. A slider scale package assembly for electrically coupling a slider/magnetic
2 recording (MR) head to a head interconnect circuit in a disc drive, comprising:
3 the slider/MR head; and
4 means for attaching to a back of the slider/MR head which turns the slider/MR
5 head into the slider scale package with at least one interconnect pad disposed at the back
6 of the slider/MR head.

1 2. A slider scale package assembly for electrically coupling a slider/magnetic
2 recording (MR) head to a head interconnect circuit in a disc drive, comprising:
3 the slider/MR head; and
4 a flex circuit attached to a back of the slider/MR head which turns the slider/MR
5 head into the slider scale package with at least one interconnect pad disposed at the back
6 of the slider/MR head.

1 3. The slider scale package assembly of claim 2, wherein the flex circuit further
2 includes a conductive material, the at least one interconnect pad is electrically connected
3 to the conductive material of the flex circuit, the slider/MR head includes at least one
4 bond pad, the conductive material of the flex circuit is electrically bonded to the at least
5 one bond pad of the slider/MR head.

1 4. The slider scale package assembly of claim 3, wherein the electrical bonding
2 between the conductive material of the flex circuit and the at least one bond pad of the
3 slider/MR head is disposed at a front end of the slider/MR head.

1 5. The slider scale package assembly of claim 3, wherein the electrical bonding
2 between the conductive material of the flex circuit and the at least one bond pad of the
3 slider/MR head is disposed at the back of the slider/MR head.

1 6. The slider scale package assembly of claim 3, wherein the electrical bonding
2 between the conductive material of the flex circuit and the at least one bond pad of the
3 slider/MR head is disposed at the back of the slider/MR head via a bonding ball.

1 7. The slider scale package assembly of claim 3, wherein the electrical bonding
2 between the conductive material of the flex circuit and the at least one bond pad of the
3 slider/MR head is disposed at a front end of the slider/MR head via a bonding ball.

1 8. The slider scale package assembly of claim 3, wherein the flex circuit includes
2 first, second, third, and fourth interconnect pads, and the slider/MR head includes first,
3 second, third, and fourth bond pads.

1 9. The slider scale package assembly of claim 8, wherein the first and second bond
2 pads are electrically coupled to a first pair of positive and negative polarities of the
3 slider/MR head for reading data, respectively, the third and fourth bond pads are
4 electrically coupled to a second pair of positive and negative polarities of the slider/MR
5 head for writing data, respectively.

10. The slider scale package assembly of claim 9, wherein the first, second, third, and
fourth interconnect pads are arranged such that the polarities of the bond pads of the head

Sub E 27 interconnect circuit match with polarities from the head interconnect circuit.

1 11. The slider scale package assembly of claim 10, wherein the first and second
2 interconnect pads are electrically connected to the first and second bond pads of the
3 slider/MR head, respectively, and the third and fourth interconnect pads are electrically
4 connected to the third and fourth bond pads of the slider/MR head, respectively.

1 12. The slider scale package assembly of claim 10, wherein the first and second
2 interconnect pads are electrically connected to the second and first bond pads of the
3 slider/MR head, respectively, and the third and fourth interconnect pads are electrically
4 connected to the fourth and third bond pads of the slider/MR head, respectively.

1 13. The slider scale package assembly of claim 3, further comprising a plurality of
2 flex circuits being disposed in a sheet format.

1 14. The slider scale package assembly of claim 13, wherein the plurality of flex
2 circuits in the sheet format are dividable into a plurality of individual flex circuits.

Sub E 27 15. A head gimbal assembly (HGA) for supporting a slider/magnetic recording (MR)
head in a disc drive, comprising:

3 a suspension supporting the slider/MR head;
4 a head interconnect circuit being attached to and disposed along the suspension;
5 the head interconnect circuit including a conductive material; and
6 a slider scale package for electrically coupling the slider/MR head to the head
7 interconnect circuit, wherein the slider scale package comprises a flex circuit attached to

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8 a back of the slider/MR head which turns the slider/MR head into the slider scale package
9 with at least one interconnect pad disposed at the back of the slider/MR head, the at least
10 one interconnect pad being electrically bonded to the conductive material of the head
11 interconnect circuit.

1 16. The HGA of claim 15, wherein the flex circuit further includes a conductive
2 material, and the slider/MR head includes at least one bond pad, the conductive material
3 of the flex circuit is electrically connected to the at least one interconnect pad at a first
4 end and to the at least one bond pad of the slider/MR head at a second end.

1 17. The HGA of claim 16, wherein the flex circuit includes first, second, third, and
2 fourth interconnect pads, and the slider/MR head includes first, second, third, and fourth
3 interconnect pads.

1 18. The HGA of claim 17, wherein the first, second, third, and fourth interconnect
2 pads are arranged such that the polarities of the bond pads of the head interconnect circuit
3 match with polarities from the head interconnect circuit.

1 19. The HGA of claim 15, further comprising a plurality of flex circuits being
2 disposed in a sheet format, the plurality of flex circuits in the sheet format being dividable
3 into a plurality of individual flex circuits

1 20. The HGA of claim 16, wherein bonding of the conductive material of the flex
2 circuit to the slider/MR head and bonding of the at least one interconnect pad of the flex
3 circuit to the conductive material of the head interconnect circuit are done in a separate

4 automated process.

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